NRCS

United States Department of Agriculture
Natural Resources Conservation Service

Idaho Water Supply Outlook Report MARCH 1, 2007

NRCS hydrologist, Jeff Anderson, uses large weight on a rope to knock a snow plug into propylene glycol antifreeze solution inside the SNOTEL precipitation gage at Mores Creek Summit, Idaho, February 28, 2007. Heavy snow during the previous week added two feet of new snow to the central Idaho mountains. Storms of this nature commonly result in snowfall rates exceeding the ability of the antifreeze inside the gage to melt the snow as it falls, and some of the snow freezes and builds up over the slushy antifreeze-water-oil interface. Although unplugging the SNOTEL gages is not always possible in many of the remote areas, the phenomenon is usually detected when the daily telemetered precipitation increases start to lag behind the daily snow water (i.e., snow pillow) increases. It is very helpful to have both those sensors plus the automated snow depth sensor independently monitoring climatic conditions, as the data are widely used by many individuals and groups to assess water supply conditions and make critical decisions for their operations. Data editors in our office will adjust the daily precipitation readings as appropriate following this situation – 1.0 inches in this case.

Basin Outlook Reports
and Federal - State - Private Cooperative Snow Surveys

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Contact - - Your local Natural Resources Conservation Service Office
or
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Internet Web Address
http://www.id.nrcs.usda.gov/snow/

How forecasts are made

Most of the annual streamflow in the western United States originates as snowfall that has accumulated in the mountains during the winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Measurements of snow water equivalent at selected manual snow courses and automated SNOTEL sites, along with precipitation, antecedent streamflow, and indices of the El Niño / Southern Oscillation are used in computerized statistical and simulation models to prepare runoff forecasts. These forecasts are coordinated between hydrologists in the Natural Resources Conservation Service and the National Weather Service. Unless otherwise specified, all forecasts are for flows that would occur naturally without any upstream influences.

Forecasts of any kind, of course, are not perfect. Streamflow forecast uncertainty arises from three primary sources: (1) uncertain knowledge of future weather conditions, (2) uncertainty in the forecasting procedure, and (3) errors in the data. The forecast, therefore, must be interpreted not as a single value but rather as a range of values with specific probabilities of occurrence. The middle of the range is expressed by the 50% exceedance probability forecast, for which there is a 50% chance that the actual flow will be above, and a 50% chance that the actual flow will be below, this value. To describe the expected range around this 50% value, four other forecasts are provided, two smaller values (90% and 70% exceedance probability) and two larger values (30%, and 10% exceedance probability). For example, there is a 90% chance that the actual flow will be more than the 90% exceedance probability forecast. The others can be interpreted similarly.

The wider the spread among these values, the more uncertain the forecast. As the season progresses, forecasts become more accurate, primarily because a greater portion of the future weather conditions become known; this is reflected by a narrowing of the range around the 50% exceedance probability forecast. Users should take this uncertainty into consideration when making operational decisions by selecting forecasts corresponding to the level of risk they are willing to assume about the amount of water to be expected. If users anticipate receiving a lesser supply of water, or if they wish to increase their chances of having an adequate supply of water for their operations, they may want to base their decisions on the 90% or 70% exceedance probability forecasts, or something in between. On the other hand, if users are concerned about receiving too much water (for example, threat of flooding), they may want to base their decisions on the 30% or 10% exceedance probability forecasts, or something in between. Regardless of the forecast value users choose for operations, they should be prepared to deal with either more or less water. (Users should remember that even if the 90% exceedance probability forecast is used, there is still a 10% chance of receiving less than this amount.) By using the exceedance probability information, users can easily determine the chances of receiving more or less water.

IDAHO WATER SUPPLY OUTLOOK REPORT

March 1, 2007

SUMMARY

After 30 days of weather doldrums, precipitation returned to Idaho in mid-February and stopped the downward trend of decreasing streamflow forecasts. February precipitation ranged from 85-110% of average across the state with nearly all of it falling the last two weeks of February. This moisture increased snowpacks from last month by up to 10 percentage points in a few basins. Snowpacks now range from 57% of average in the Owyhee Basin to 93% in the Panhandle Region. This is great news for Idaho's winter recreation enthusiasts and even better news for Idaho's numerous water users. Streamflow forecasts are up slightly from last month, except in the Owyhee basin which jumped 15-20 percentage points. Most streamflow forecasts now range from 65-95% of average. With one more month of winter to go, additional moisture would help top off the mountain snowpack. If March is dry, the snowpack will only be 50-75% of its seasonal peak that occurs in early April and would put a damper on supplies in basins without storage facilities. Reservoir storage remains promising and will help provide adequate irrigation supplies for irrigators in the Owyhee, Salmon Falls, Oakley and Payette basins. Little Wood and Boise reservoir users should have adequate supplies. Upper Snake should have adequate supplies and similar to 2006 as long as runoff volumes are above 65% of average. Supplies may be marginal for Bear, Magic and Mackay reservoir users along with irrigators in the Little Lost basin.

SNOWPACK

A change in the weather in the second half of February kept Idaho's snowpacks from plummeting two months in a row. Near average February precipitation was enough to maintain snow levels about 90% of average in the Panhandle Region. The Clearwater basin hosts the second highest snowpack at 88% of average. Basins that increased 10-12 percentage points from a month ago are Owyhee, Henrys Fork, Teton, Camas, Beaver and Medicine Lodge basins. Owyhee basin remains the lowest in the state at 57% of average. The next lowest snowpacks are about 70% of average in the Little Wood and Big Lost basins, and 74% in the Bear River basin. Snowpacks are 75-85% of average for most of Idaho. The monthly Owyhee aerial marker snow survey was not completed as of press time due to weather and snow water equivalent values will be incorporated in the final report published on the Internet.

Often the Salmon River basin is the dividing area between above or below snowpacks to the north or south, but this year the snowpacks are similar statewide. This winter's dry spell revealed bare ground on many south-facing slopes above 6,000 feet prior to mid-February's snow storms. Several feet of snow now covers these south-facing slopes but this snow is sitting on soils warmed by the sun during February. With warm air temperatures predicted for early March, the warm soils may re-expose these snow covered areas quicker than if than had remained snow covered.

PRECIPITATION

After nearly 30 days and nights of cold, dry weather in January and warmer, dry weather in early February, blue skies turned gray and brought much needed moisture to Idaho. With ample moisture in the second half of the February, it seems like we should have received above average amounts for the month, but keep in mind how dry the first half of the month was. In reality, much of the state ended the month with less than average February precipitation. The lowest precipitation for the month was 80% of average in the Big Wood and Little Wood basin. The Panhandle, Clearwater, Salmon, Weiser, Payette, Boise and Big Lost basins faired a little better at 90-95% of average. Generally above average amounts fell in the Upper Snake, Southside Snake, and the Bear River basins, although individual SNOTEL sites in these areas ranged from 80% to over 125% of average. The highest February amounts fell in the Bruneau Basin which ended the month at 116% of average, benefiting from a storm track that blanketed most of Nevada with 110-130% of average in February.

Water year-to-date precipitation is another piece of the water supply puzzle. Mountain precipitation since the water year started October 1, 2006 is about 110% of average in the Panhandle, Clearwater and Oakley basins.

Elsewhere, amounts range from 85-95% of average. In contrast, current snowpack percentages are only 60-90% of average. This condition prompts the questions, "How did this happen and what are the water supply implications of having near average or better precipitation while snowpack percentages are less than average?" To answer the first part, warm temperatures during late October and mid-December resulted in rain, which ran out of watersheds, melted some early snows and produced significant streamflow peaks instead of locking that moisture in the snowpack. The late fall and early winter rains gave water year-to-date precipitation the lead on the snowpacks. Now, even though that early season water is not stored in the basin as snow water equivalent, last fall's runoff will still have a positive influence on this spring's conditions because it saturated the soils across most of the state and maintained near average baseflows in headwater streams this winter. This means less snowmelt this spring is needed to fill soils to field capacity levels allowing melt water to runoff into streams more efficiently. This year's conditions are different from recent drought years when soils were dry going into winter and often needed 2-6 inches of snowmelt water to bring the soils to field capacity in the spring. To view soil moisture graphs go to our Idaho Snow Survey - Climate Information web page: http://www.id.nrcs.usda.gov/snow/climate/. Good baseflows for streams not affected by reservoir releases can be viewed on the Idaho USGS website from our Related Links - Streamflow page: http://www.id.nrcs.usda.gov/snow/links/#Streamflow.

The ideal scenario for Idaho water users would be autumn moisture falling as rain in September-October and changing to snow in higher elevations in October-November. Fall precipitation not only fills soil profiles providing positive consequences but it is also essential for late season small grain crops, such as wheat and barley, that are planted in dry cropland areas around the state such as Driggs, Fairfield and northern Idaho that receive more than 12 inches of annual precipitation. In higher elevation snow zones, early season snow has other impacts like driving big game animals to lower elevations and allowing winter recreationists earlier access to snow covered areas.

RESERVOIRS

Reservoir carryover storage is another critical piece for the water supply puzzle. Storage is in good shape this year at 100-130% of average across most of the state because of last year's abundant runoff. The lowest storage in the state remains in Bear Lake at only 39% of capacity, this amount could be better, but is much higher than the extremely low carryover amounts seen in the recent drought years. Typically, during winter there is little change in reservoir storage and this is even more valid when snowpacks are below normal. Most reservoir operators are currently in a wait and see mode; waiting for future weather conditions that will dictate how much more snow falls and how rapidly Idaho's frozen liquid gold melts. Currently conditions look easier to manage than last year when cold temperatures kept above average snow in the mountains until Mother Nature threw heated a curveball that kept reservoir operators on their toes. Record high daytime temperatures May 18 flushed the snow from the mountains to the rivers producing a very high streamflow peaks. Then, another heated curveball with an extended period of non-freezing temperatures June 1-10 and record high nighttime temperatures June 8 flushed the remaining snow out from the mountains during final fill of many reservoirs. Stay tuned to see what Mother Nature has in store for Idaho this spring.

Note: NRCS reports reservoir information in terms of usable volumes, which includes both active, inactive and in some cases, dead storage. Other operators may report reservoir contents in different terms. For additional information, see the reservoir definitions in this report.

STREAMFLOW

Blue skies in the first half of February and a series of storms the second half, stabilized snow levels from a month ago and increased streamflow forecasts slightly from last month. Current forecasts range from 65-95% of average from most of the state. The downward trend in daily streamflow forecasts for the first half of the month mirrored a stock market decrease during a sluggish period. This can be observed by clicking on our Daily Guidance Streamflow Forecasts on our Idaho - Water Supply webpage: http://www.id.nrcs.usda.gov/snow/watersupply/. Luckily, for water users and river runners, the change in weather patterns brought moisture back into the state and gave mid-Westerners and Easterners a break from shoveling their abundant snowfall. With Idaho streamflow forecasts still below average statewide we'll take all we can; any extra will be fully utilized. The Surface Water Supply Index (SWSI) which compares and ranks

the summation of current reservoir storage and projected streamflow are useful in comparisons with historic years. The index also compares the current water supply conditions to historic thresholds when surface water irrigation shortages occurred. For this season, using the 50% Chance of Exceedance Forecasts, the SWSIs indicate that surface irrigation supplies may be marginally adequate for Magic, Big Lost, Little Lost and Bear water users, while most other areas should have adequate supplies. On the bright side, the climate prediction center forecasts only a 33% chance that precipitation will be below normal for the next 3 months. The same forecast was projected last month and most of Idaho welcomed above average February precipitation.

Note: Forecasts published in this report are NRCS guidance forecasts. NRCS is using SNOTEL data in a timely manner to provide timely streamflow forecast for users. Official jointly coordinated and published forecasts by the USDA Natural Resources Conservation Service and the US Department of Commerce, NOAA, National Weather Service are available from the joint west-wide Water Supply Outlook for the Western US at http://www.wcc.nrcs.usda.gov/wsf/westwide.html. The forecast numbers mentioned in the narrative are the volume under the 50% Chance of Exceeding, which means there is a 50% chance the volume will be greater or less than the given value. Water users may wish to use a lesser exceedance forecast to reduce the risk of coming up water short.

RECREATION

Powder, powder, powder! Winter recreation just kept getting better and better at the end of February. After a so-so season folks were elated to dust off their powder boards, clear their schedules and drive to their local hill for as many fresh tracks as their legs, smiles, and employers could bear. By March 1, resorts all across the state reported between 25-40 inches of fluffy, new snow blanketing their slopes. As snow continued to fall and winds moved additional snow to lee slopes, ski resorts were the place to be as the storms kept backcountry avalanche hazards high to considerable throughout the period. On February 27, The Payette Avalanche Center in McCall reported that, "These deep conditions are enough to make turning on 30 degree slopes difficult even on the fattest of skis" and warned that "this will tempt many to seek steeper terrain" where "decision making is critical... as seeking steeper terrain will lead you into higher avalanche hazard areas." Backcountry skiers, snowboarders and snowmobilers seeking steeper terrain should always consult their local avalanche advisory to aid them in making wise decisions when entering avalanche terrain. Links to avalanche centers can be found at the bottom of the Idaho Snow Survey - Recreation page: http://www.id.nrcs.usda.gov/snow/recreation/.

Looking toward the whitewater season, snowpacks and streamflow forecasts stabilized from their downward trend that started in January. As a consequence of snowpacks at only 60-80% of average in Idaho's high desert basins, the streams are forecasted at 72% of average for the Owyhee River near Rome and 75% for the Bruneau River. If you want to run the high desert streams in southern Idaho, you might have to have your vessel ready to go when Mother Nature turns the heat up. The floating season will not be as long as last year without abundant spring moisture. Last year's runoff on the Bruneau River was 144% of average and 180% on the Owyhee River near Rome. On the positive side, the Owyhee River near Rome shot up twice to flows of 5,000 and 3,500 cfs in February. This could be due to primed soils from last fall or partially frozen soils, or a combination of the two. The rains that produced these runoff events were less than one inch of precipitation at South Mountain and Mud Lake SNOTEL sites, so get those boats ready as the floating season will be flowing soon. The Middle Fork Salmon River snowpack is 84% of average, two-thirds of last year, and the river is forecast at 83% of average. Farther north, the Lochsa and Selway rivers snowpack is 87% of average and streams are forecast at 95% of average. River runners can always find good whitewater boating opportunities in Idaho even with below normal snow levels.

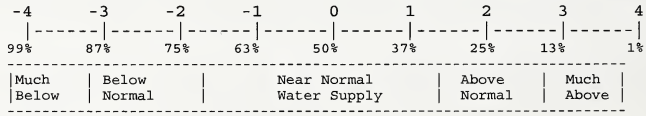
IDAHO SURFACE WATER SUPPLY INDEX (SWSI) *As of March 1, 2007*

The Surface Water Supply Index (SWSI) is a predictive indicator of surface water availability within a watershed for the spring and summer water use season. The index is calculated by combining pre-runoff reservoir storage (carryover) with forecasts of spring and summer streamflow. SWSI values are scaled from +4.0 (abundant supply) to -4.0 (extremely dry), with a value of zero indicating a median water supply as compared to historical occurrences. The SWSI analysis period is from 1971 to present.

SWSI values provide a more comprehensive outlook of water availability by combining streamflow forecasts and reservoir storage where appropriate. The SWSI index allows comparison of water availability between basins for drought or flood severity analysis. Threshold SWSI values have been determined for some basins to indicate the potential for agricultural irrigation water shortages.

BASIN or REGION	*SWSI Value*	*Most Recent Year With Similar SWSI Value*	*Agricultural Water Supply Shortage May Occur When SWSI is Less Than*
PANHANDLE	-0.3	1983	NA
CLEARWATER	1.3	2006	NA
SALMON	-0.5	2003	NA
WEISER	-0.9	2000	NA
PAYETTE	-0.2	2003	NA
BOISE	0.2	2000	-2.0
BIG WOOD	-0.2	2000	-0.2
LITTLE WOOD	0.0	2005	-1.8
BIG LOST	-0.5	2005	-0.2
LITTLE LOST	-0.5	2006	-0.5
HENRYS FORK	-0.3	1989	-3.3
SNAKE (HEISE)	0.2	2006	-1.8
OAKLEY	0.7	1997	-1.0
SALMON FALLS	0.5	1995	-1.5
BRUNEAU	-1.1	2004	NA
BEAR RIVER	-2.1	2002	-3.3

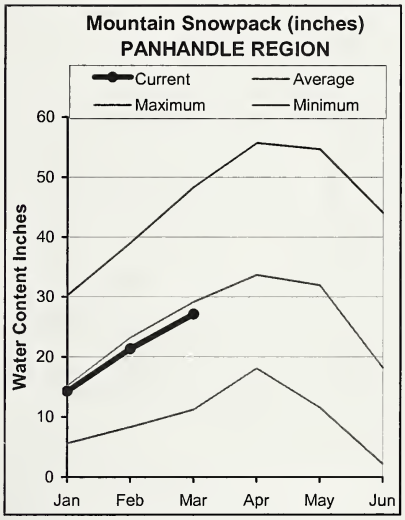
SWSI SCALE, PERCENT CHANCE OF EXCEEDANCE, AND INTERPRETATION

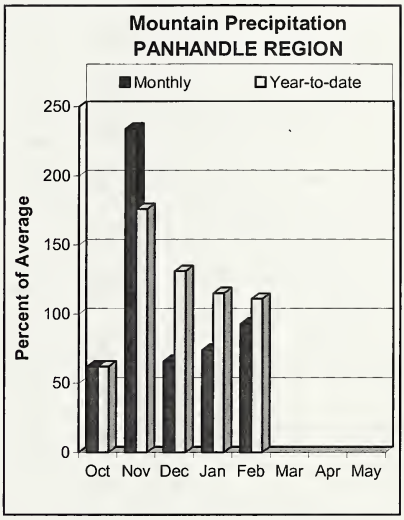


NA = Not Applicable

Note: The Percent Chance of Exceedance is an indicator of how often a range of SWSI values might be expected to occur. Each SWSI unit represents about 12% of the historical occurrences. As an example of interpreting the above scale, the SWSI can be expected to be greater than -3.0, 87% of the time and less than -3.0, 13% of the time. Half the time, the SWSI will be below and half the time above a value of zero. The interval between -1.5 and +1.5 described as "Near Normal Water Supply," represents three SWSI units and would be expected to occur about one-third (36%) of the time.

PANHANDLE REGION
MARCH 1, 2007





WATER SUPPLY OUTLOOK

Near average precipitation in February in the Panhandle Region maintained or slightly increased snow percentages from a month ago. Water year-to-date precipitation remains above average at 111% for the Panhandle Region. The Panhandle, Clearwater and Oakley basins are the only watersheds in the state to receive above average precipitation since the water year started. Snowpacks in the region range from about 90 to 110% of the March 1 average, but overall the snowpack is 93%. Pend Oreille basin snowpack is on the low end at 89% while Hayden Lake, Rathdrum Creek and Moyie River are on the high end around 110%. The 2007 climatic variables are very similar to 2006. The difference is that more moisture fell as rain in November and December 2006 versus November and December of 2005. Thus, the snowpack is a little less than last year and cumulative precipitation since October 1 is a little more this year than last year. It also means that soils are saturated and should provide more efficient runoff when the snow melts. Even baseflows remained higher longer in the beginning of the January cold spell. The Spokane River and Pend Oreille Lake inflow are forecast at 95% of average, and Kootenai River at 96%. The highest forecast in the region is for the Moyie River at 114% of average and it has a snowpack of 114% of average. Thus, water supplies are looking very similar to last year. Spring temperatures and precipitation will determine how the pack melts and fills the streams.

PANHANDLE REGION

Streamflow Forecasts - March 1, 2007

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
KOOTENAI at Leonia (1,2)	APR-JUL	5690	6420	6750	96	7080	7810	7040
	APR-SEP	7310	7600	7800	96	8000	8290	8120
MOYIE RIVER at Eastport	APR-JUL	380	430	460	114	490	540	405
	APR-SEP	395	445	475	113	505	555	420
SMITH CREEK	APR-JUL	100	118	130	106	143	164	123
	APR-SEP	102	122	136	105	151	175	129
BOUNDARY CREEK	APR-JUL	108	119	127	103	135	148	123
	APR-SEP	114	125	133	103	141	154	129
CLARK FK at Whitehorse Rpds (1,2)	APR-JUL	7940	9910	10800	96	11700	13700	11300
	APR-SEP	8650	10800	11800	94	12800	15000	12500
PEND OREILLE Lake Inflow (2)	APR-JUL	9830	11200	12200	96	13200	14600	12700
	APR-SEP	10600	12100	13200	95	14300	15800	13900
PRIEST near Priest River (1,2)	APR-JUL	665	750	810	99	875	970	815
	APR-SEP	705	795	860	99	925	1030	870
NF COEUR D'ALENE RIVER AT ENAVILLE	APR-JUL	510	620	705	95	795	930	740
	APR-SEP	545	655	740	95	830	970	780
ST. JOE at Calder	APR-JUL	865	985	1070	94	1160	1300	1140
	APR-SEP	920	1040	1130	94	1220	1360	1200
SPOKANE near Post Falls (2)	APR-JUL	1880	2210	2440	96	2670	3000	2550
	APR-SEP	1950	2300	2530	96	2760	3110	2650
SPOKANE at Long Lake (2)	APR-JUL	2080	2470	2730	96	2990	3380	2850
	APR-SEP	2250	2660	2940	96	3220	3630	3070

PANHANDLE REGION

Reservoir Storage (1000 AF) - End of February

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
HUNGRY HORSE	3451.0	2799.0	2748.0	2047.6
FLATHEAD LAKE	1791.0	822.1	840.2	802.7
NOXON RAPIDS	335.0	325.5	309.5	297.5
PEND OREILLE	1561.3	658.6	844.8	778.8
COEUR D'ALENE	238.5	127.5	83.3	144.9
PRIEST LAKE	119.3	56.9	50.4	56.8

PANHANDLE REGION

Watershed Snowpack Analysis - March 1, 2007

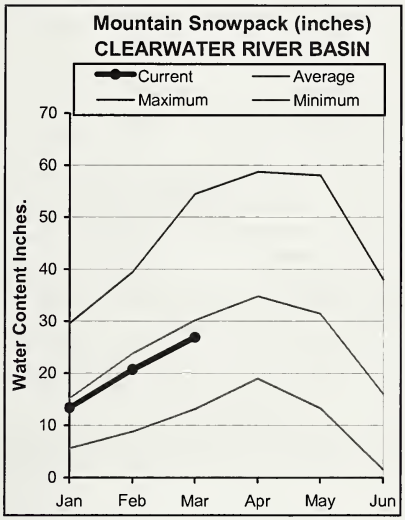
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Kootenai ab Bonners Ferry	25	102	100
Moyie River	6	131	114
Priest River	4	82	97
Pend Oreille River	92	85	89
Rathdrum Creek	4	96	109
Hayden Lake	2	113	120
Coeur d'Alene River	9	95	96
St. Joe River	5	94	91
Spokane River	17	96	98
Palouse River	2	98	87

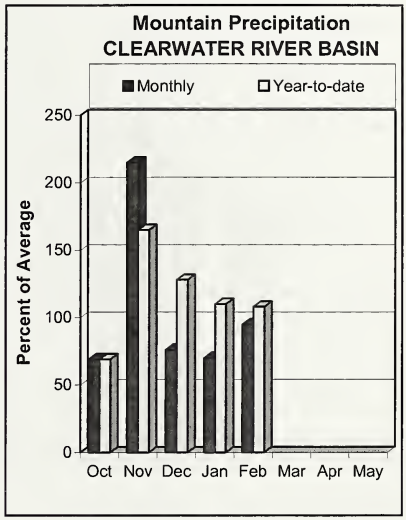
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

CLEARWATER RIVER BASIN
MARCH 1, 2007





WATER SUPPLY OUTLOOK

The Clearwater Basin received 95% of its normal February precipitation. Water year-to-date precipitation is above average, similar to the Panhandle Region, at 108% of average. These two basins and Oakley basin in southern Idaho are the only drainages in the state with above average precipitation amounts since the water year started October 1. Snowpack percentages increased a few percentage points from last month and now range from 86-88% of average for these tributaries and basin as a whole. The year's snowpack is slightly less than last year, which was near normal all winter and resulted in near normal runoff volumes. Let's hope for the same or better this year. Last year's snowpack melted rapidly in mid-May producing very high peaks for a normal snow year; over 20,000 cfs on the Lochsa River and over 30,000 cfs on the Selway River. This year the Lochsa and Selway rivers are forecast at about 95% of average, as are Dworshak Reservoir inflow and mainstem points on the Clearwater River. Dworshak Reservoir is storing 110% of average, 72% of capacity and will fill. Water supplies are looking similar to last year based on current snow and precipitation. Spring temperatures and precipitation will determine timing and magnitude of the seasonal snowmelt peak flows.

CLEARWATER RIVER BASIN

Streamflow Forecasts - March 1, 2007

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
SELWAY near Lowell	APR-JUL	1630	1810	1940	94	2070	2280	2060
	APR-SEP	1710	1900	2040	94	2180	2390	2170
LOCHSA near Lowell	APR-JUL	1230	1370	1470	96	1570	1730	1530
	APR-SEP	1300	1450	1550	96	1660	1820	1610
DWORSHAK RESV INFLOW (1,2)	APR-JUL	1600	2240	2530	96	2820	3460	2640
	APR-SEP	1760	2400	2690	96	2980	3620	2800
CLEARWATER at Orofino (1)	APR-JUL	2840	3910	4400	95	4890	5960	4650
	APR-SEP	3110	4180	4670	95	5160	6230	4900
CLEARWATER at Spalding (1,2)	APR-JUL	4700	6350	7100	96	7850	9500	7430
	APR-SEP	5120	6770	7520	96	8270	9920	7850

CLEARWATER RIVER BASIN

Reservoir Storage (1000 AF) - End of February

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
DWORSHAK	3468.0	2482.5	2302.8	2247.3

CLEARWATER RIVER BASIN

Watershed Snowpack Analysis - March 1, 2007

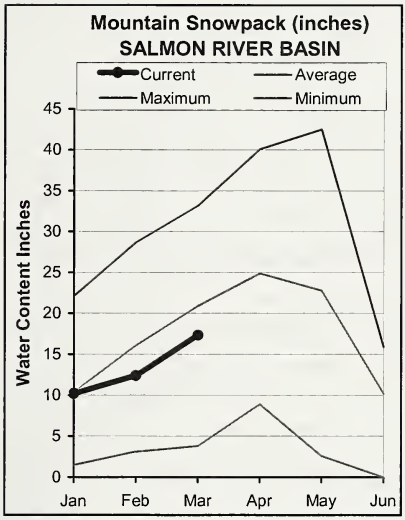
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
North Fork Clearwater	9	90	88
Lochsa River	3	82	86
Selway River	5	78	87
Clearwater Basin Total	18	89	88

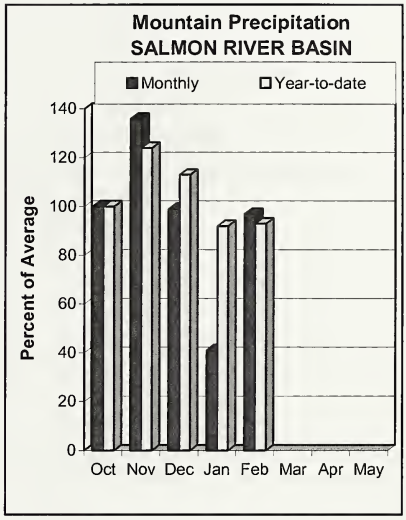
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

SALMON RIVER BASIN
MARCH 1, 2007





WATER SUPPLY OUTLOOK

February precipitation was 97% of average and was enough to allow the snowpack to increase a few percentage points from a month ago. Water year-to-date precipitation is 93% of average. The snowpack in the Salmon River basin and its famous tributaries is 85% of average. The good news is the snowpack in the Salmon basin just exceeded the peak levels of 2005, but is only three-quarters of last year's snowpack. Streamflow runoff in 2005 was 68% of average for the Middle Fork and White Bird gages. Last year's runoff was 110% of average, slightly below the April 1 snowpack percentages of 117%. With the snowpack between the 2005 and 2006 levels, this year's streamflow forecasts also split the difference and call for 89% of average for the Salmon River at Salmon, 83% for the Middle Fork Salmon River and 85% for the Salmon River at White Bird. The forecast remains lowest in the Lemhi River at only 76% of average. To reach normal snow levels by early April, precipitation amounts that are 150% of average are needed between now and early April. Early April is when the snowpack typically reaches its peak for the season, after that, April temperatures and precipitation will determine if the pack continues building or starts its gradual annual decline. May temperatures and precipitation will still determine the timing and magnitude of peak flows.

SALMON RIVER BASIN

Streamflow Forecasts - March 1, 2007

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
SALMON at Salmon (1)	APR-JUL	580	685	760	89	840	965	855
	APR-SEP	680	800	885	89	975	1120	1000
Lemhi River nr Lemhi	APR-JUL	33	51	65	76	81	108	86
	APR-SEP	41	62	79	75	98	129	105
MF Salmon at MF Lodge	APR-JUL	500	585	650	83	715	820	785
	APR-SEP	570	665	730	83	800	910	875
SALMON at White Bird (1)	APR-JUL	3840	4480	4950	85	5440	6200	5850
	APR-SEP	4290	4990	5500	85	6040	6870	6480

SALMON RIVER BASIN

Reservoir Storage (1000 AF) - End of February

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

SALMON RIVER BASIN

Watershed Snowpack Analysis - March 1, 2007

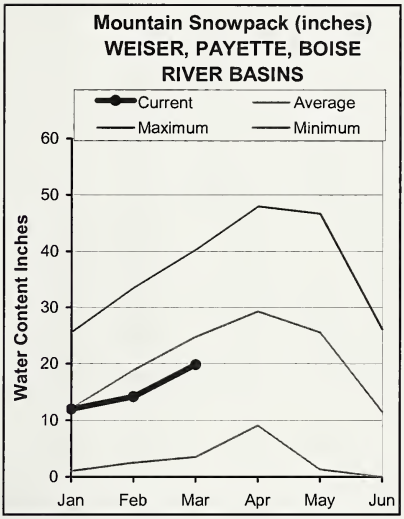
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Salmon River ab Salmon	10	69	86
Lemhi River	10	85	87
Middle Fork Salmon River	3	68	84
South Fork Salmon River	3	68	84
Little Salmon River	4	72	83
Salmon Basin Total	29	73	84

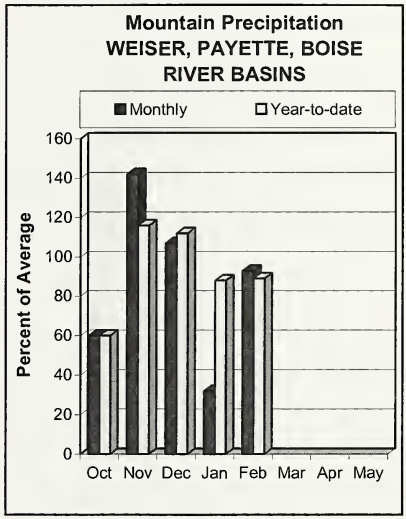
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

WEISER, PAYETTE, BOISE RIVER BASINS MARCH 1, 2007





WATER SUPPLY OUTLOOK

Mid-February's change in the weather pattern brought much needed moisture for Idaho. Even though it felt like spring in the valley, air temperatures were cold enough for additional snow to accumulate to the tune of over 3 feet of the liquid gold in Idaho's central mountains! However, the late February storms only left the Boise, Payette and Weiser Basins at 74%, 82% and 77% of normal snow water content for this time of year, respectively. If the last two weeks were not wet, the snowpacks would be in the 70-75% of normal range, which reinforces the fact that January and early February were exceptionally dry. The water year-to-date precipitation remains 87-93% of normal for this region, even though some of our sites received over 7 inches of precipitation for the month and were above their averages for February. The same story continues with the streamflow forecasts. With all the new precipitation, you might be tempted to believe the watersheds would produce more spring runoff, but the streams are forecasted below average at 75-85% of average due to the drier conditions in January and February. Even though we are behind on snow and precipitation, the carry over storage from last years runoff in the Weiser, Payette and Boise reservoir systems is above average. In fact, reservoir operators would have to plan their operations differently with above average snowpacks. With this better news than last month, winter recreationalists are happy and irrigation supplies should be adequate based on the 50% Chance of Exceedance Forecasts.

WEISER, PAYETTE, BOISE RIVER BASINS
Streamflow Forecasts - March 1, 2007

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
WEISER near Weiser (1)	MAR-JUL	290	375	445	80	520	635	555
	APR-SEP	225	295	350	83	410	505	420
SF PAYETTE at Lowman	APR-JUL	290	345	380	86	420	480	440
	APR-SEP	330	390	430	87	475	540	495
DEADWOOD RESERVOIR Inflow (1,2)	APR-JUL	86	101	112	84	124	142	134
	APR-SEP	91	108	120	85	133	153	142
LAKE FORK PAYETTE near McCall	APR-JUL	60	69	75	88	82	92	85
	APR-SEP	62	71	78	88	85	95	89
NF PAYETTE at Cascade (1,2)	APR-JUL	325	390	440	85	490	570	520
	APR-SEP	340	410	460	85	515	600	540
NF PAYETTE nr Banks (2)	APR-JUL	415	505	570	84	635	725	675
	APR-SEP	425	520	590	84	660	755	700
PAYETTE nr Horseshoe Bend (1,2)	APR-JUL	995	1270	1400	85	1530	1810	1640
	APR-SEP	1010	1350	1500	85	1650	1990	1760
BOISE near Twin Springs (1)	APR-JUL	385	450	495	78	545	620	635
	APR-SEP	425	495	545	79	600	680	690
SF BOISE at Anderson Ranch Dam (1,2)	APR-JUL	300	365	415	77	465	550	540
	APR-SEP	325	395	445	77	500	585	580
MORES CREEK near Arrowrock Dam	APR-JUL	69	92	109	83	128	157	131
	APR-SEP	72	95	113	83	132	163	137
BOISE near Boise (1,2)	APR-JUN	720	910	995	79	1080	1270	1260
	APR-JUL	705	990	1120	79	1250	1530	1410
	APR-SEP	805	1090	1220	80	1350	1630	1530

WEISER, PAYETTE, BOISE RIVER BASINS
Reservoir Storage (1000 AF) - End of February

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
MANN CREEK	11.1	4.2	8.1	6.1
CASCADE	693.2	508.9	491.7	438.3
DEADWOOD	161.9	103.2	75.6	88.5
ANDERSON RANCH	450.2	310.5	232.7	268.0
ARROWROCK	272.2	242.2	108.7	210.4
LUCKY PEAK	293.2	137.8	91.6	120.4
LAKE LOWELL (DEER FLAT)	165.2	95.9	85.4	109.1

WEISER, PAYETTE, BOISE RIVER BASINS
Watershed Snowpack Analysis - March 1, 2007

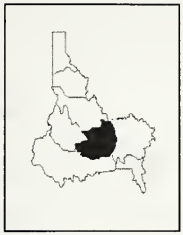
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Mann Creek	2	73	73
Weiser River	5	73	77
North Fork Payette	8	72	83
South Fork Payette	5	66	82
Payette Basin Total	14	70	82
Middle & North Fork Boise	5	63	78
South Fork Boise River	9	57	72
Mores Creek	5	68	77
Boise Basin Total	16	61	74
Canyon Creek	2	49	67

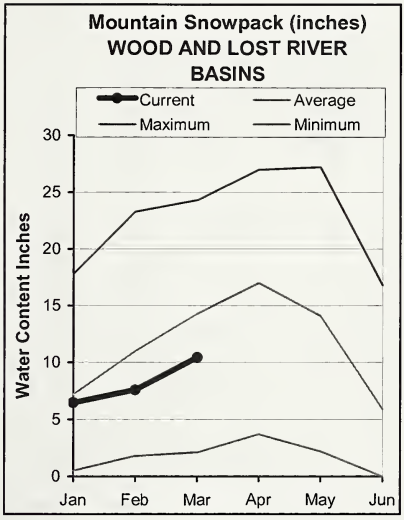
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

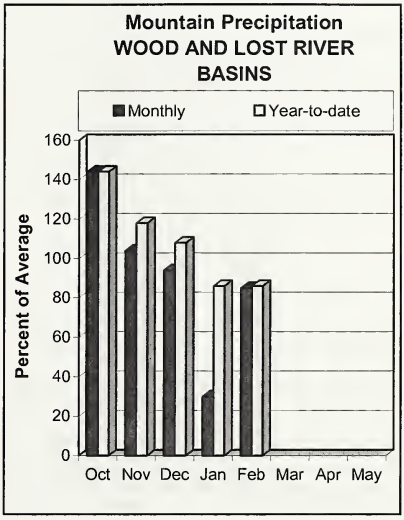
The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

WOOD and LOST RIVER BASINS
MARCH 1, 2007







WATER SUPPLY OUTLOOK

The water year-to-date precipitation is behind in the Wood and Lost basins even with the recent storm activity. The Big Wood and Little Wood basins are at 84% of average and the Medicine Lodge, Beaver and Camas drainages are in the best shape at 94% of normal for the water year. February precipitation concentrated more in the Little Lost, Medicine Lodge, Beaver and Camas Basins at 110% of normal and was less in the Little Wood at 78 and the Big Lost Basin at 87 of normal. If the precipitation during the last two weeks of February had not occurred, the February precipitation in the Big Lost basin would have been about 20% of normal and the snowpacks inevitably would have also suffered. As a whole, the snowpacks in the Wood and Lost Basins are at 73% of normal and only about half of their seasonal peaks. The streamflow forecasts only improved a few percentage points from last month owing to the extremely dry January. However, reservoir storage is well above average due to last year's runoff. Currently, Magic, Mackay and Little Wood reservoirs are storing 133% of average. Irrigation supplies are improving, but more snow or spring rain is needed to ensure supplies are better than marginally adequate for Magic, Mackay and Little Lost irrigators.

WOOD AND LOST RIVER BASINS
Streamflow Forecasts - March 1, 2007

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter ======>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
BIG WOOD at Hailey (1)	APR-JUL	136	173	200	78	230	275	255
	APR-SEP	154	195	225	78	260	310	290
BIG WOOD ab Magic Reservoir	APR-JUL	64	96	123	65	154	210	190
	APR-SEP	48	99	134	66	169	220	204
CAMAS CREEK near Blaine	APR-JUL	27	46	63	63	82	115	100
	APR-SEP	27	46	63	62	82	115	101
BIG WOOD below Magic Dam (2)	APR-JUL	63	136	186	64	235	310	290
	APR-SEP	69	145	197	65	250	325	305
LITTLE WOOD R ab High Five Ck	MAR-JUL	37	52	63	74	75	96	85
	MAR-SEP	41	57	69	75	82	104	92
	APR-JUL	31	46	57	73	70	90	78
	APR-SEP	35	51	63	74	77	99	85
LITTLE WOOD near Carey (2)	MAR-JUL	41	57	69	72	82	104	96
	MAR-SEP	45	62	75	72	89	113	104
	APR-JUL	35	50	62	71	75	97	87
	APR-SEP	38	55	68	72	82	106	94
BIG LOST at Howell Ranch	APR-JUL	95	124	145	84	168	205	173
	APR-SEP	109	141	165	84	191	235	197
BIG LOST bl Mackay Reservoir	APR-JUL	65	93	115	82	139	179	141
	APR-SEP	84	115	140	81	167	210	172
LITTLE LOST bl Wet Creek	APR-JUL	17.4	22	26	84	30	36	31
	APR-SEP	21	27	32	82	37	45	39

WOOD AND LOST RIVER BASINS
Reservoir Storage (1000 AF) - End of February

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
MAGIC	191.5	124.7	62.2	89.7
LITTLE WOOD	30.0	27.6	9.0	17.7
MACKAY	44.4	31.0	32.3	30.8

WOOD AND LOST RIVER BASINS
Watershed Snowpack Analysis - March 1, 2007

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Big Wood ab Hailey	8	56	72
Camas Creek	5	54	72
Big Wood Basin Total	13	56	72
Fish Creek	3	58	77
Little Wood River	8	57	72
Big Lost River	6	54	67
Little Lost River	4	73	81
Birch-Medicine Lodge Cree	4	73	75
Camas-Beaver Creeks	4	70	79

* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
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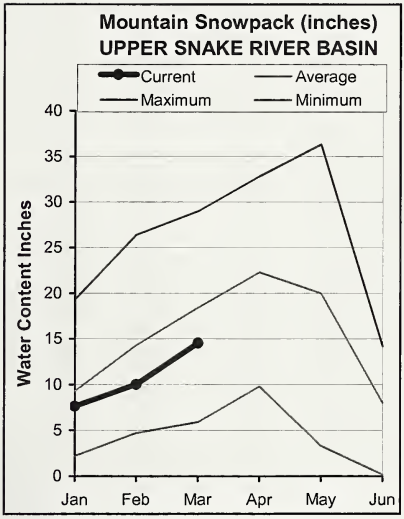
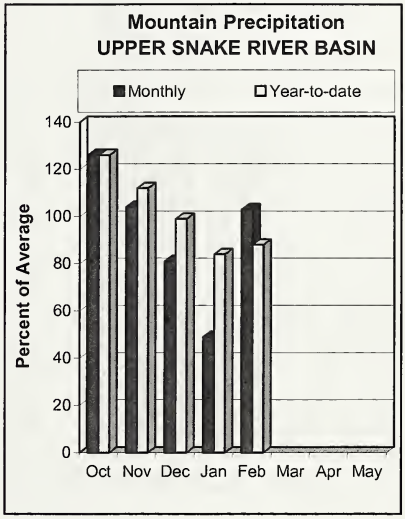
UPPER SNAKE BASINS
MARCH 1, 2007





WATER SUPPLY OUTLOOK

February precipitation rebounded to slightly above average amounts after dismal totals in January. Water year-to-date precipitation for the entire basin is up a few points to 88% of average, slightly better than last year. The snowpack for the Snake River above American Falls is 78% of average. The best snowpacks are 81% of average in the Henrys Fork, Falls River and Snake River above Jackson Lake basins. The Hoback basin has the lowest snowpack at 72% of average. Pine Creek Pass SNOTEL, in the Teton basin, has the best individual snowpack relative to average at 94%; the only other sites that break the 90% value are Island Park SNOTEL, in the Henrys Fork basin, and Two Ocean Plateau SNOTEL, deep inside Yellowstone Park. Soil moisture under the snowpack remains high and will allow more efficient runoff when the snow melts. Streams are forecast at 59% of average for the Blackfoot River, 77% for American Falls Reservoir inflow, 87% for Henrys Fork near Rexburg, and 83% for Snake River near Heise. Based on the Surface Water Supply Index, which combines reservoir storage and streamflow projections, surface water supplies will be marginally adequate if runoff volumes at Heise are at least 65% of average. Storage for the seven reservoirs in the Upper Snake system is 111% of average, 79% of capacity. Jackson Lake's storage is 129% of average, 75% full, while Palisades Reservoir is 102% of average, 75% full.

UPPER SNAKE RIVER BASIN

Streamflow Forecasts - March 1, 2007

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
HENRYS FORK near Ashton (2)	APR-JUL	380	445	495	87	545	625	570
	APR-SEP	535	615	675	88	735	830	765
HENRYS FORK near Rexburg (2)	APR-JUL	1090	1250	1360	87	1470	1630	1560
	APR-SEP	1490	1670	1790	89	1910	2090	2010
FALLS RIVER nr Ashton (2)	APR-JUL	260	305	335	88	365	410	380
	APR-SEP	310	365	400	89	435	490	450
TETON RIVER NEAR DRIGGS	APR-JUL	94	116	133	81	151	179	165
	APR-SEP	124	152	172	82	194	230	210
TETON near St. Anthony	APR-JUL	235	285	325	80	365	430	405
	APR-SEP	290	350	395	82	440	515	480
SNAKE at Flagg Ranch	APR-JUL	355	405	440	89	475	525	495
	APR-SEP	395	450	485	89	520	575	545
SNAKE nr Moran (1,2)	APR-JUL	565	675	725	89	775	885	815
	APR-SEP	625	750	805	89	860	985	905
PACIFIC CREEK at Moran	APR-JUL	101	125	141	83	157	181	171
	APR-SEP	110	134	150	84	166	190	178
SNAKE ab resv nr Alpine (1,2)	APR-JUL	1600	1880	2010	85	2140	2420	2370
	APR-SEP	1940	2260	2410	88	2560	2880	2730
GREYS above Palisades	APR-JUL	240	275	300	88	325	360	340
	APR-SEP	280	320	350	89	380	420	395
SALT near Etna	APR-JUL	130	192	235	69	280	340	340
	APR-SEP	179	250	300	71	350	420	420
SNAKE nr Irwin (1,2)	APR-JUL	2130	2570	2770	83	2970	3410	3330
	APR-SEP	2580	3070	3290	85	3510	4000	3870
SNAKE near Heise (2)	APR-JUL	2410	2740	2960	83	3180	3510	3560
	APR-SEP	2910	3280	3530	85	3780	4150	4160
WILLOW CREEK nr Ririe	MAR-JUL	22	38	52	59	68	94	88
BLACKFOOT RESV INFLOW	APR-JUN	50	62	71	59	80	95	120
SNAKE nr Blackfoot (1,2)	APR-JUL	2830	3440	3710	81	3980	4590	4600
	APR-SEP	3750	4360	4630	82	4900	5510	5620
PORTNEUF at Topaz	MAR-JUL	45	56	65	73	74	89	89
	MAR-SEP	56	70	81	74	93	111	109
AMERICAN FALLS RESV INFLOW (1,2)	APR-JUL	1290	2110	2480	77	2850	3670	3240
	APR-SEP	1450	2270	2640	75	3010	3830	3510

UPPER SNAKE RIVER BASIN

Reservoir Storage (1000 AF) - End of February

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
HENRYS LAKE	90.4	82.3	85.3	84.4
ISLAND PARK	135.2	118.0	96.7	107.1
GRASSY LAKE	15.2	12.4	8.3	12.0
JACKSON LAKE	847.0	635.9	411.5	494.0
PALISADES	1400.0	1053.4	855.7	1033.1
RIRIE	80.5	44.5	43.1	38.5
BLACKFOOT		NO REPORT		
AMERICAN FALLS	1672.6	1415.6	1313.8	1271.1

UPPER SNAKE RIVER BASIN

Watershed Snowpack Analysis - March 1, 2007

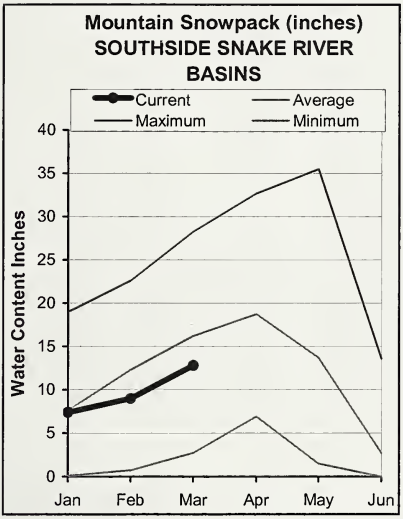
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Henrys Fork-Falls River	12	71	81
Teton River	8	65	74
Henrys Fork above Rexburg	20	69	78
Snake above Jackson Lake	9	70	80
Gros Ventre River	3	72	74
Hoback River	5	68	72
Greys River	5	63	78
Salt River	5	65	80
Snake above Palisades	28	68	77
Willow Creek	7	63	79
Blackfoot River	5	67	78
Portneuf River	7	59	72
Snake abv American Falls	49	67	78

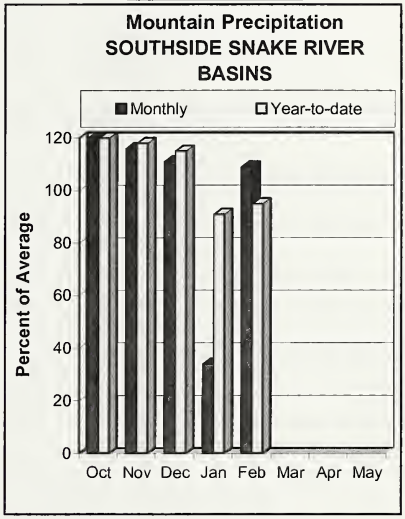
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

SOUTHSIDE SNAKE RIVER BASINS MARCH 1, 2007





WATER SUPPLY OUTLOOK

The Southside Snake Basins were arguably affected the most by drastic changes in weather in Idaho over the last two weeks. These basins have really rebounded, leaving the water year-to-date precipitation at 88% of average in the Owyhee Basin to 108% of average in the Oakley drainage. In the Owyhee Basin, January's monthly precipitation was 29% of average, while February ended at 108% of average for the month. All of the credit is given to the last two weeks in February. In fact, the January 31 Owyhee aerial snow survey flight revealed bare ground at many locations, while the March 1 flight was delayed until March 5 due to weather. The Owyhee aerial marker information was not available at press time and will be posted in the final report on our website. The snowpacks are still behind due to abnormally dry weather in January, and are 57-81% of normal in the Owyhee and Oakley Basins respectively. Streamflow forecasts increased to 60-70% of average in the Owyhee basin. Runoff in February may have been from primed soils or frozen soils or a combination as rain amounts were only about an inch. The Southside Snake Reservoir systems are above average and range from 105% of average at Brownlee to 137% of average at Oakley. Irrigation supplies will be adequate for Owyhee, Salmon Falls and Oakley reservoir users with storage levels at 110-140% of average. River runners will have to be ready for short-lived snow generated streamflow peaks; spring rains can change the runoff story as was observed in May 2005.

SOUTHSIDE SNAKE RIVER BASINS
Streamflow Forecasts - March 1, 2007

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
OAKLEY RESERVOIR INFLOW	MAR-JUL	16.5	23	28	82	34	43	34
	MAR-SEP	17.7	25	30	81	36	45	37
OAKLEY RESV STORAGE	MAR-31	45	46	47	131	48	49	36
	APR-30	47	49	51	124	53	55	41
	MAY-31	49	53	56	124	59	63	45
SALMON FALLS CREEK nr San Jacinto	MAR-JUN	40	54	65	73	77	96	89
	MAR-JUL	42	57	69	74	82	102	93
	MAR-SEP	45	61	73	75	86	107	98
SALMON FALLS RESV STORAGE	MAR-31	79	83	86	123	89	93	70
	APR-30	89	95	99	113	103	109	88
	MAY-31	88	97	104	103	111	120	101
BRUNEAU near Hot Spring	MAR-JUL	106	146	177	75	210	265	235
	MAR-SEP	112	154	186	74	220	280	250
OWYHEE near Gold Creek (2)	MAR-JUL	10.4	16.2	21	66	26	35	32
	MAR-SEP	9.8	15.4	20	65	25	34	31
OWYHEE nr Owyhee (2)	APR-JUL	28	45	59	72	75	101	82
OWYHEE near Rome	MAR-JUL	188	285	360	62	445	585	580
	MAR-SEP	205	305	380	63	465	605	600
OWYHEE RESV INFLOW (2)	MAR-JUL	182	285	365	59	455	610	615
	MAR-SEP	194	300	385	60	480	640	645
	APR-SEP	122	215	290	67	380	530	430
SUCCOR CK nr Jordan Valley	MAR-JUL	5.1	8.4	11.0	65	14.0	19.2	16.9
Reynolds Creek nr Tollgate	MAR-JUL	3.9	5.2	6.3	65	7.4	9.3	9.7

SOUTHSIDE SNAKE RIVER BASINS
Reservoir Storage (1000 AF) - End of February

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
OAKLEY	75.6	43.1	34.3	31.4
SALMON FALLS	182.6	77.8	46.6	59.8
WILDHORSE RESERVOIR	71.5	50.9	42.4	40.1
OWYHEE	715.0	531.6	549.8	489.1
BROWNLEE	1420.0	1147.8	877.4	1090.5

SOUTHSIDE SNAKE RIVER BASINS
Watershed Snowpack Analysis - March 1, 2007

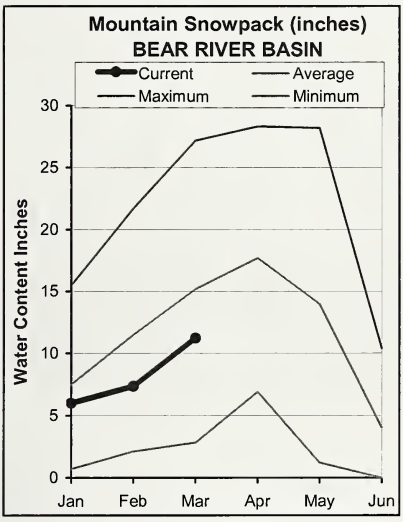
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Raft River	6	64	87
Goose-Trapper Creeks	7	58	81
Salmon Falls Creek	8	52	68
Bruneau River	8	51	68
Reynolds Creek	6	66	74
Owyhee Basin Total	11	47	57

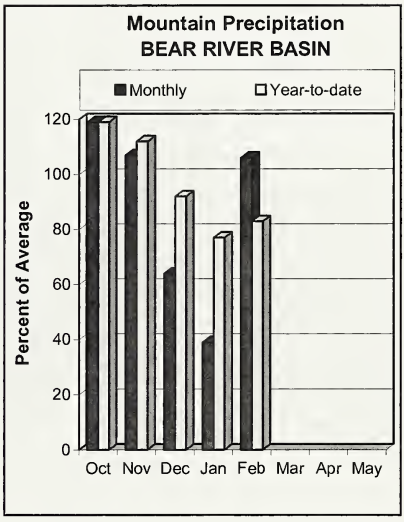
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

BEAR RIVER BASIN
MARCH 1, 2007





WATER SUPPLY OUTLOOK

After two months of below normal precipitation, February precipitation bounced back up to average levels at 106%. Water year-to-date precipitation is 83% of average, lowest in the state and less than three-quarters of last year. Snowpacks increased 10 percentage points from a month ago and now range from 70-75% of average in the Bear River and its tributaries. The snow is less than two-thirds of last year at this time, and only 58% of its seasonal peak that occurs in early April. Last year's snowpack peaked at 124% of average on April 1 for the Bear River producing runoff volumes that were only 66% of average. Spring precipitation and baseflows have a strong influence on seasonal runoff. April-June precipitation last year was only 72% of average and was 125% of average in 2005, a year that had average snow and runoff volume of 112% of average. Currently, streams are forecasted at 86% of average in the headwater streams in Utah and decrease to 66% of average for the Bear River at Stewart Dam. The Reasonable Minimum Forecast or the 90% Chance of Exceedance Forecast for Stewart Dam is for 29% of average. Bear Lake is storing 550,000 acre-feet, highest February 28 level since 2002, and will help meet irrigation demands if runoff is low. Based on the variable runoff and climatic conditions the past two years and lack of a full drought recovery as indicated by Bear Lake reaching only 39% capacity, 60% of average, good spring precipitation is critical. Water users should keep their eye on the sky and hope those clouds brings more moisture to the basin in the next two months to ensure ample water.

BEAR RIVER BASIN

Streamflow Forecasts - March 1, 2007

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Bear River nr UT-WY State Line	APR-JUL	70	86	97	86	109	128	113
	APR-SEP	76	94	107	86	121	143	125
Bear River ab Reservoir nr Woodruff	APR-JUL	52	81	105	77	132	176	136
	APR-SEP	53	84	109	77	138	185	142
Big Creek nr Randolph	APR-JUL	1.1	2.1	3.0	61	4.0	5.8	4.9
Smiths Fork nr Border	APR-JUL	47	60	70	68	81	98	103
	APR-SEP	57	72	83	69	95	114	121
Bear River at Stewart Dam	APR-JUL	70	116	154	66	197	270	234
	APR-SEP	77	129	172	66	220	305	262
Little Bear River at Paradise	APR-JUL	14.5	23	29	63	36	48	46
Logan R Abv State Dam Nr Logan	APR-JUL	50	69	85	68	102	130	126
Blacksmith Fk Abv Up&L Dam Nr Hyrum	APR-JUL	18.4	27	33	69	40	52	48

BEAR RIVER BASIN

Reservoir Storage (1000 AF) - End of February

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
BEAR LAKE	1421.0	549.7	408.7	910.7
MONTPELIER CREEK	4.0	2.1	2.8	1.7

BEAR RIVER BASIN

Watershed Snowpack Analysis - March 1, 2007

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Smiths & Thomas Forks	4	61	75
Bear River ab WY-ID line	14	63	74
Montpelier Creek	2	63	75
Mink Creek	4	60	75
Cub River	3	51	69
Bear River ab ID-UT line	25	61	74
Malad River	3	61	70

* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

Streamflow Adjustment List for All Forecasts Published in Idaho Water Supply Outlook Report: streamflow forecasts are projections of runoff volumes that would occur without influences from upstream reservoirs or diversions. These values are referred to as natural, unregulated or adjusted flows. To make these adjustments, changes in reservoir storage, diversions, and inter-basin transfers are added or subtracted from the observed (actual) streamflow volumes. The following list documents the adjustments made for each forecast point. **(Revised Dec. 2005).**

Panhandle River Basins

Kootenai R at Leonia, ID
+ Lake Koocanusa (Storage Change)
Boundary Ck nr Porthill, ID – No Corrections
Moyie R at Eastport, ID – No Corrections
Smith Creek nr Porthill, ID – No Corrections
Clark Fork R at Whitehorse Rapids, ID
+ Hungry Horse (Storage Change)
+ Flathead Lake (Storage Change)
+ Noxon Rapids Resv (Storage Change)
Pend Oreille Lake Inflow, ID
+ Pend Oreille R at Newport, WA
+ Hungry Horse (Storage Change)
+ Flathead Lake (Storage Change)
+ Noxon Rapids (Storage Change
+ Pend Oreille Lake (Storage Change)
+ Priest Lake (Storage Change)
Priest R nr Priest R, ID
+ Priest Lake (Storage Change)
NF Coeur d'Alene R at Enaville, ID - No Corrections
St. Joe R at Calder, ID - No Corrections
Spokane R nr Post Falls, ID
+ Coeur d'Alene Lake (Storage Change)
Spokane R at Long Lake, WA
+ Coeur d'Alene Lake (Storage Change)
+ Long Lake, WA (Storage Change)

Clearwater River Basin

Selway R nr Lowell - No Corrections
Lochsa R nr Lowell - No Corrections
Dworshak Resv Inflow, ID
+ Clearwater R nr Peck, ID
- Clearwater R at Orofino, ID
+ Dworshak Resv (Storage Change)
Clearwater R at Orofino, ID - No Corrections
Clearwater R at Spalding, ID
+ Dworshak Resv (Storage Change)

Salmon River Basin

Salmon R at Salmon, ID - No Corrections
Lemhi R nr Lemhi, ID – No Corrections
MF Salmon R at MF Lodge, ID – No Corrections
Salmon R at White Bird, ID - No Corrections

Weiser, Payette, Boise River Basins

Weiser R nr Weiser, ID - No Corrections
SF Payette R at Lowman, ID - No Corrections
Deadwood Resv Inflow, ID
+ Deadwood R blw Deadwood Resv nr Lowman
+ Deadwood Resv (Storage Change)
Lake Fork Payette R nr Mccall, ID – No Corrections
NF Payette R at Cascade, ID
+ Cascade Resv (Storage Change)
+ Payette Lake (Storage Change)
NF Payette R nr Banks, ID
+ Cascade Resv (Storage Change)
+ Payette Lake (Storage Change)
Payette R nr Horseshoe Bend, ID
+ Cascade Resv (Storage Change)
+ Deadwood Resv (Storage Change)
+ Payette Lake (Storage Change)
Boise R nr Twin Springs, ID - No Corrections
SF Boise R at Anderson Ranch Dam, ID
+ Anderson Ranch Resv (Storage Change)
Boise R nr Boise, ID
+ Anderson Ranch Resv (Storage Change)
+ Arrowrock Resv (Storage Change)
+ Lucky Peak Resv (Storage Change)

Wood and Lost River Basins

Big Wood R at Hailey, ID - No Corrections
Big Wood R abv Magic Resv, ID
+ Big Wood R nr Bellevue, ID
+ Willow Ck
Camas Ck nr Blaine – No Corrections
Big Wood R blw Magic Dam nr Richfield, ID
+ Magic Resv (Storage Change)
Little Wood R abv High Five Ck, ID – No Corrections
Little Wood R nr Carey, ID
+ Little Wood Resv (Storage Change)
Big Lost R at Howell Ranch, ID - No Corrections
Big Lost R blw Mackay Resv nr Mackay, ID
+ Mackay Resv (Storage Change)
Little Lost R blw Wet Ck nr Howe, ID - No Corrections

Upper Snake River Basin

Henrys Fork nr Ashton, ID
+ Henrys Lake (Storage Change)
+ Island Park Resv (Storage Change)
Henrys Fork nr Rexburg, ID
+ Henrys Lake (Storage Change)
+ Island Park Resv (Storage Change)
+ Grassy Lake (Storage Change)
+ Diversions from Henrys Fk btw Ashton to St. Anthony, ID
+ Diversions from Henrys Fk btw St. Anthony to Rexburg, ID
+ Diversions from Falls R abv nr Ashton, ID
+ Diversions from Falls R nr Ashton to Chester, ID
Falls R nr Ashton, ID
+ Grassy Lake (Storage Change)
+ Diversions from Falls R abv nr Ashton, ID
Teton R nr Driggs, ID - No Corrections
Teton R nr St. Anthony, ID
- Cross Cut Canal into Teton R
+ Sum of Diversions for Teton R abv St. Anthony, ID
Snake R nr Moran, WY
+ Jackson Lake (Storage Change)
Pacific Ck at Moran, WY – No Corrections
Snake R abv Palisades, WY
+ Jackson Lake (Storage Change)

Greys R abv Palisades, WY – No Corrections
Salt R abv Palisades, WY – No Corrections
Snake R nr Irwin, ID
+ Jackson Lake (Storage Change)
+ Palisades Resv (Storage Change)
Snake R nr Heise, ID
+ Jackson Lake (Storage Change)
+ Palisades Resv (Storage Change)
Willow Ck nr Ririe, ID
+ Ririe Resv (Storage Change)
Blackfoot Resvervoir Inflow, ID
+ Blackfoot Reservoir releases
+ Blackfoot Resv (Storage Change
Snake R nr Blackfoot, ID
+ Palisades Resv (Storage Change)
+ Jackson Lake (Storage Change)
+ Diversions from Snake R btw Heise and Shelly
+ Diversions from Snake R btw Shelly and Blackfoot
Portneuf R at Topaz, ID - No Corrections
American Falls Resv Inflow, ID
+ Snake River at Neeley
+ All Corrections made for Henrys Fk nr Rexburg, ID
+ Jackson Lake (Storage Change)
+ Palisades Resv (Storage Change)
+ Diversions from Snake R btw Heise and Shelly
+ Diversions from Snake R btw Shelly and Blackfoot

Southside Snake River Basins

Oakley Resv Inflow, ID
+ Goose Ck abv Trapper Ck
+ Trapper Ck nr Oakley
Salmon Falls Ck nr San Jacinto, NV - No Corrections
Bruneau R nr Hot Springs, ID - No Corrections
Owyhee R nr Gold Ck, NV
+ Wildhorse Resv (Storage Change)
Owyhee R nr Owyhee, NV
+ Wildhorse Resv (Storage Change)
Owyhee R nr Rome, OR – No Corrections
Owyhee Resv Inflow, OR
+ Owyhee R blw Owyhee Dam, OR
+ Owyhee Resv (Storage Change)
+ Diversions to North and South Canals
Succor Ck nr Jordan Valley, OR - No Corrections
Snake R at King Hill, ID - No Corrections
Snake R nr Murphy, ID - No Corrections
Snake R at Weiser, ID - No Corrections
Snake R at Hells Canyon Dam, ID
+ Brownlee Resv (Storage Change)

Bear River Basin

Bear R nr UT-WY Stateline, UT – No Corrections
Bear R abv Resv nr Woodruff, UT – No Corrections
Smiths Fork nr Border, WY - No Corrections
Bear R blw Stewart Dam nr Montpelier, ID
+ Bear R blw Stewart Dam
+ Rainbow Inlet Canal

Reservoir Capacity Definitions (Units in 1,000 Acre-Feet, KAF)

Different agencies use various definitions when reporting reservoir capacity and contents. Reservoir storage terms include dead, inactive, active, and surcharge storage. This table lists these volumes for each reservoir, and defines the storage volumes NRCS uses when reporting capacity and current reservoir storage. In most cases, NRCS reports usable storage, which includes active and inactive storage. **(Revised Dec. 2005)**

Basin/ Reservoir	Dead Storage	Inactive Storage	Active Storage	Surcharge Storage	NRCS Capacity	NRCS Capacity Includes
Panhandle Region						
Hungry Horse	39.73	---	3451.00	---	3451.0	Active
Flathead Lake	Unknown	---	1791.00	---	1791.0	Active
Noxon Rapids	Unknown	---	335.00	---	335.0	Active
Pend Oreille	406.20	112.40	1042.70	---	1561.3	Dead+Inactive+Active
Coeur d'Alene	---	13.50	225.00	---	238.5	Inactive+Active
Priest Lake	20.00	28.00	71.30	---	119.3	Dead+Inactive+Active
Clearwater Basin						
Dworshak	---	1452.00	2016.00	---	3468.0	Inactive+Active
Weiser/Boise/Payette Basins						
Mann Creek	1.61	0.24	11.10	---	11.1	Active
Cascade	---	46.70	646.50	---	693.2	Inactive+Active
Deadwood	---	---	161.90	---	161.9	Active
Anderson Ranch	24.90	37.00	413.10	---	450.1	Inactive+Active
Arrowrock	---	---	272.20	---	272.2	Active
Lucky Peak	---	28.80	264.40	13.80	293.2	Inactive+Active
Lake Lowell	7.90	5.80	159.40	---	165.2	Inactive+Active
Wood/Lost Basins						
Magic	Unknown	---	191.50	---	191.5	Active
Little Wood	---	---	30.00	---	30.0	Active
Mackay	0.13	---	44.37	---	44.4	Active
Upper Snake Basin						
Henrys Lake	---	---	90.40	---	90.4	Active
Island Park	0.40	---	127.30	7.90	135.2	Active+Surcharge
Grassy Lake	---	---	15.18	---	15.2	Active
Jackson Lake	Unknown	---	847.00	---	847.0	Active
Palisades	44.10	155.50	1200.00	---	1400.0	Dead+Inactive+Active
Ririe	4.00	6.00	80.54	10.00	80.5	Active
Blackfoot	---	---	348.73	---	348.7	Active
American Falls	---	---	1672.60	---	1672.6	Active
Southside Snake Basins						
Oakley	---	---	75.60	---	75.6	Active
Salmon Falls	48.00	5.00	182.65	---	182.6	Active+Inactive
Wildhorse	---	---	71.50	---	71.5	Active
Owyhee	406.83	---	715.00	---	715.0	Active
Brownlee	0.45	444.70	975.30	---	1420.0	Inactive+Active
Bear River Basin						
Bear Lake	5.0 MAF	119.00	1302.00	---	1421.0	Active+Inactive: includes 119 that can be released
Montpelier Creek	0.21	---	3.84	---	4.0	Dead+Active

Interpreting Water Supply Forecasts

Introduction
Each month, five forecasts are issued for each forecast point and each forecast period. Unless otherwise specified, all streamflow forecasts are for streamflow volumes that would occur naturally without any upstream influences. Water users need to know what the different forecasts represent if they are to use the information correctly when making operational decisions. The following is an explanation of each of the forecasts.

90 Percent Chance of Exceedance Forecast. There is a 90 percent chance that the actual streamflow volume will exceed this forecast value, and there is a 10 percent chance that the actual streamflow volume will be less than this forecast value.

70 Percent Chance of Exceedance Forecast. There is a 70 percent chance that the actual streamflow volume will exceed this forecast value, and there is a 30 percent chance that the actual streamflow volume will be less than this forecast value.

50 Percent Chance of Exceedance Forecast. There is a 50 percent chance that the actual streamflow volume will exceed this forecast value, and there is a 50 percent chance that the actual streamflow volume will be less than this forecast value. Generally, this forecast is the middle of the range of possible streamflow volumes that can be produced given current conditions.

30 Percent Chance of Exceedance Forecast. There is a 30 percent chance that the actual streamflow volume will exceed this forecast value, and there is a 70 percent chance that the actual streamflow volume will be less than this forecast value.

10 Percent Chance of Exceedance Forecast. There is a 10 percent chance that the actual streamflow volume will exceed this forecast value, and there is a 90 percent chance that the actual streamflow volume will be less than this forecast value.

*Note: There is still a 20 percent chance that actual streamflow volumes will fall either below the 90 percent exceedance forecast or above the 10 percent exceedance forecast.

These forecasts represent the uncertainty inherent in making streamflow predictions. This uncertainty may include sources such as: unknown future weather conditions, uncertainties associated with the various prediction methodologies, and the spatial coverage of the data network in a given basin.

30-Year Average. The 30-year average streamflow for each forecast period is provided for comparison. The average is based on data from 1971-2000. The % AVG. column compares the 50% chance of exceedance forecast to the 30-year average streamflow; values above 100% denote when the 50% chance of exceedance forecast would be greater than the 30-year average streamflow.

AF - Acre-feet, forecasted volume of water are typically in thousands of acre-feet.

These forecasts are given to users to help make risk-based decisions. Users can select the forecast corresponding to the level of risk they are willing to accept in order to minimize the negative impacts of having more or less water than planned for.

To Decrease the Chance of Having Less Water than Planned for
A user might determine that making decisions based on a 50 percent chance of exceedance forecast is too much risk to take (there is still a 50% chance that the user will receive less than this amount). To reduce the risk of .having less water than planned for, users can base their operational decisions on one of the forecasts with a greater chance of being exceeded such as the 90 or 70 percent exceedance forecasts.

To Decrease the Chance of Having More Water than Planned for
A user might determine that making decisions based on a 50 percent chance of exceedance forecast is too much risk to take (there is still a 50% chance that the user will receive more than this amount). To reduce the risk of having more water than planned for, users can base their operational decisions on one of the forecasts with a lesser chance of being exceeded such as the 30 or 10 percent exceedance forecasts.

Using the forecasts - an Example
Using the 50 Percent Exceedance Forecast. Using the example forecasts shown below, there is a 50% chance that actual streamflow volume at the Boise River near Twin Springs will be less than 685 KAF between April 1 and July 31. There is also a 50% chance that actual streamflow volume will be greater than 685 KAF.

Using the 90 and 70 Percent Exceedance Forecasts. If an unexpected shortage of water could cause problems (such as irrigated agriculture), users might want to plan on receiving 610 KAF (from the 70 percent exceedance forecast). There is a 30% chance of receiving *less* than 610 KAF.

Alternatively, if users determine the risk of using the 70 percent exceedance forecast is too great, then they might plan on receiving 443 KAF (from the 90 percent exceedance forecast). There is 10% chance of receiving less than 443 KAF.

Using the 30 or 10 Percent Exceedance Forecasts. If an unexpected excess of water could cause problems (such as operating a flood control reservoir), users might plan on receiving 760 KAF (from the 30 percent exceedance forecast). There is a 30% chance of receiving *more* than 760 KAF.

Alternatively, if users determine the risk of using the 30 percent exceedance forecast is too great, then they might plan on receiving 927 KAF (from the 10 percent exceedance forecast). There is a 10% chance of receiving more than 927 KAF.

Users could also choose a volume in between any of these values to reflect their desired risk level.

Weiser, Payette, Boise River Basins
Streamflow Forecasts – January 2006

Forecast Point	Forecast Period	Chance of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000 AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
SF PAYETTE RIVER at Lowman	APR-JUL	329	414	471	109	528	613	432
	APR-SEP	369	459	521	107	583	673	488
BOISE RIVER near Twin Springs (1)	APR-JUL	443	610	685	109	760	927	631
	APR-SEP	495	670	750	109	830	1005	690

*90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table

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